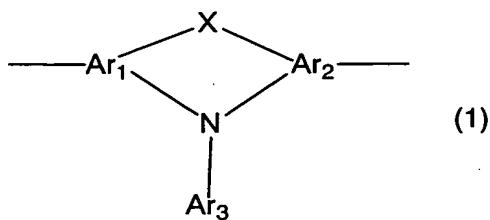


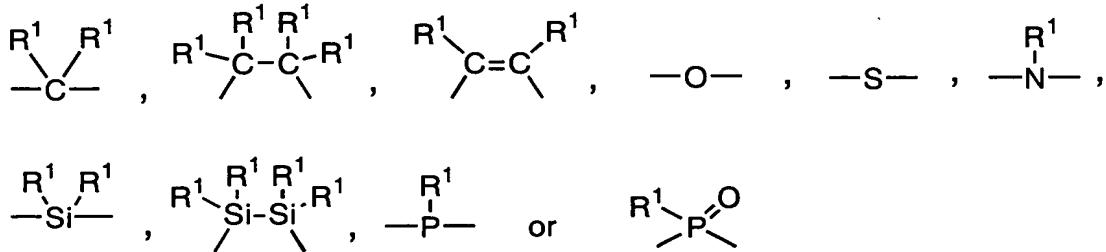
## Claims

1. A complex composition containing a polymer compound and a metal complex showing light-emission from triplet excited state comprising the repeating unit represented by formula (1),



(wherein,  $\text{Ar}_1$  and  $\text{Ar}_2$  each independently represent a trivalent aromatic hydrocarbon group or a trivalent heterocyclic group,  $\text{Ar}_3$  represents an aromatic hydrocarbon group or a heterocyclic group, and said  $\text{Ar}_3$  has on the ring a group selected from alkyl group, alkoxy group, alkylthio group, alkylsilyl group, alkylamino group, aryl group, aryloxy group, arylalkyl group, arylalkoxy group, arylalkenyl group, arylalkynyl group, arylamino group, monovalent heterocyclic group, and cyano group.  $\text{X}$  represents a single bond or a connecting group).

2. A complex composition according to claim 1, wherein the connecting group is a group represented by the below formulas

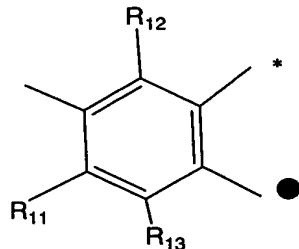


(wherein,  $\text{R}^1$  each independently represents a hydrogen atom, halogen atom, alkyl group, alkoxy group, alkylthio group, alkylamino group, aryl group, aryloxy group, arylthio group, arylamino group, arylalkyl group, arylalkoxy group, arylalkylthio group, arylalkylamino group, acyloxy group, amide group, arylalkenyl group, arylalkynyl group, monovalent

heterocyclic group, or cyano group).

3. A complex composition according to claim 1, wherein X is a single bond.

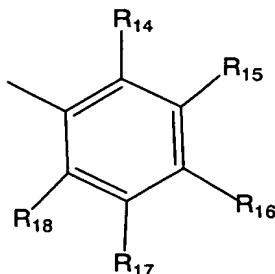
4. A complex composition according to any one of claims 1 to 3, wherein the trivalent aromatic hydrocarbon group is a group represented by the below formula,



(wherein, R<sub>11</sub>, R<sub>12</sub>, and R<sub>13</sub> each independently represent a hydrogen atom, halogen atom, alkyl group, alkoxy group, alkylthio group, alkylamino group, aryl group, aryloxy group, arylthio group, arylamino group, arylalkyl group, arylalkoxy group, arylalkylthio group, arylalkylamino group, acyl group, acyloxy group, amide group, imino group, substituted silyl group, substituted silyloxy group, substituted silylthio group, substituted silylamino group, monovalent heterocyclic group, arylalkenyl group, arylethynyl group, or cyano group.

\* means a bonding to X, and ● means a bonding to N.).

5. A complex composition according to any one of claims 1 to 4, wherein the aromatic hydrocarbon group is a group represented by the below formula,



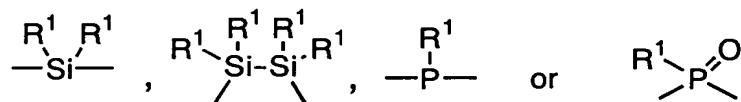
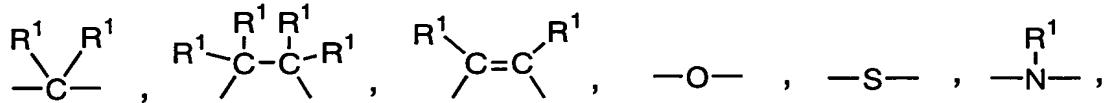
(wherein, R<sub>14</sub>, R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub>, and R<sub>18</sub> each independently represent a hydrogen atom, alkyl group, alkoxy group, alkylthio group, alkylsilyl group, alkylamino group, aryl group, aryloxy group, arylalkyl group, arylalkoxy group, arylalkenyl group,

arylalkynyl group, arylamino group, monovalent heterocyclic group, or cyano group, but at least one of R<sub>14</sub>, R<sub>15</sub>, R<sub>16</sub> and R<sub>17</sub> is not a hydrogen atom.).

6. A complex composition according to any one of claims 1 to 5, wherein the composition further include an electron transporting compound.

7. A polymer complex compound which contains a repeating unit represented by the above formula (1), and a metal complex structure showing light-emission from triplet excited state, and exhibits a visible light-emission in the solid state.

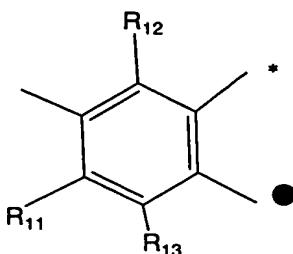
8. A polymer complex compound according to claim 7, wherein the connecting group is a group represented by the below formulas,



(wherein, R<sub>1</sub> each independently represent a hydrogen atom, halogen atom, alkyl group, alkoxy group, alkylthio group, alkylamino group, aryl group, aryloxy group, arylthio group, arylamino group, arylalkyl group, arylalkoxy group, arylalkylthio group, arylalkylamino group, acyloxy group, amide group, arylalkenyl group, arylalkynyl group, monovalent heterocyclic group, or cyano group.).

9. A polymer complex compound according to claim 7, wherein X is a single bond.

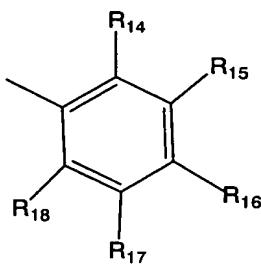
10. A polymer complex compound according to any one of claims 7 to 9, wherein the trivalent aromatic hydrocarbon group is a group represented by the below formulas



(wherein, R<sub>11</sub>, R<sub>12</sub>, and R<sub>13</sub> each independently represent a hydrogen atom, halogen atom, alkyl group, alkoxy group, alkylthio group, alkylamino group, aryl group, aryloxy group, arylthio group, arylamino group, arylalkyl group, arylalkoxy group, arylalkylthio group, arylalkylamino group, acyl group, acyloxy group, amide group, imino group, substituted silyl group, substituted silyloxy group, substituted silylthio group, substituted silylamino group, monovalent heterocyclic group, arylalkenyl group, arylethynyl group, or cyano group.

\* means a bonding to X, and ● means a bonding to N.).

11. A polymer complex compound according to any one of claims 7 to 10, wherein the aromatic hydrocarbon group is a group represented by the below formulas,



(wherein, R<sub>14</sub>, R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub>, and R<sub>18</sub>, each independently represent a hydrogen atom, alkyl group, alkoxy group, alkylthio group, alkylsilyl group, alkylamino group, aryl group, aryloxy group, arylalkyl group, arylalkoxy group, arylalkenyl group, arylalkynyl group, arylamino group, monovalent heterocyclic group, or cyano group, but at least one of R<sub>14</sub>, R<sub>15</sub>, R<sub>16</sub> and R<sub>17</sub> is not a hydrogen atom.).

12. A polymer light-emitting device containing a layer which contains the complex composition according to any one of claims 1-6, or the polymer complex compound according to any one of claims 7-11, between the electrodes consisting of an anode and

a cathode.